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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,577	08/24/2001	Shigeo Mikoshiba	Q65912	8851

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EXAMINER

COLON, GERMAN

ART UNIT PAPER NUMBER

2879

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/935,577

Applicant(s)

MIKOSHIBA ET AL.

Examiner

German Colón

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The Remarks, filed on February 05, 2004, has been entered and acknowledged by the Examiner.

Drawings

2. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81. No new matter may be introduced in the required drawing.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Murata et al. (US 6,611,099).

Regarding claim 1, Murata discloses a vacuum ultraviolet radiation excited light-emitting device comprising a discharge space (see at least Figs. 1-2B) filled with a rare gas between a

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front faceplate 31 and a rear faceplate 11, and a fluorescent material 41 layer provided on the front faceplate, the fluorescent material having a thickness of not more than about 7 μm (see Col. 7, lines 65-66).

Referring to claim 7, Murata discloses the fluorescent material layer containing a fluorescent material having an average primary particle diameter of not more than about 1 μm (see Col. 7, lines 58-64).

5. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Morton (US 6,005,342).

Regarding claim 1, Morton discloses a vacuum ultraviolet radiation excited light-emitting device comprising a discharge space (see Col. 2, lines 11-13, and Col. 3, lines 64-65) filled with a rare gas between a front faceplate and a rear faceplate, and a fluorescent material layer provided on the front faceplate, the fluorescent material having a thickness of not more than about 7 μm (see Col. 5, lines 42-44).

Referring to claim 7, Morton discloses the fluorescent material layer containing a fluorescent material having an average primary particle diameter of not more than about 1 μm (see Col. 3, lines 31-35).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-2, 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsawa et al. (US 5,939,826) in view of Murata et al. (US 6,611,099).

Regarding claim 1, Ohsawa discloses a vacuum ultraviolet radiation excited light-emitting device comprising a discharge space S filled with a rare gas between a front faceplate 3 and a rear faceplate 1, and a fluorescent material 7 layer provided on the front faceplate. Ohsawa teaches the thickness of the fluorescent material on the front faceplate to be optimized to produce a thin layer which avoids attenuation of light (see Col. 6, lines 7-10 and 20-25), but is silent regarding the limitation of “the thickness being less than 7 μm ”.

However, in the same field of endeavor, Murata discloses a PDP comprising a fluorescent material having a thickness of less than 7 μm and teaches said thickness to be suitable for reducing the voltage applied to the fluorescent material, which minimizes the discharge start voltage of each discharge space, facilitating driving control for displaying an image (see Col. 15, lines 44-55, and Col. 7, lines 65-66). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the fluorescent material with a thickness of 7 μm with the purpose of reducing the voltage applied to the fluorescent material, which minimizes the discharge start voltage of each discharge space, facilitating driving control for displaying an image.

Regarding claim 2, Ohsawa-Murata discloses the light-emitting device further comprising a fluorescent material on the rear faceplate.

Referring to claim 5, Ohsawa-Murata discloses the light-emitting device being a PDP.

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Referring to claim 6, Ohsawa-Murata discloses the fluorescent material on the rear faceplate having a thickness of not more than about 20 μm . Same reasons for the thickness value stated in claim 1 apply.

Referring to claim 7, Ohsawa-Murata discloses the fluorescent material layer containing a fluorescent material having an average primary particle diameter of not more than about 1 μm (see '099, Col. 3, lines 31-35).

8. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anandan et al. (US 5,708,324) in view of Murata et al. (US 6,611,099).

Regarding claim 1, Anandan discloses a vacuum ultraviolet radiation excited light-emitting device comprising a discharge space 4 filled with a rare gas between a front faceplate 1 and a rear faceplate 2, and a fluorescent material 6 layer provided on the front faceplate. Anandan teaches the thickness of the fluorescent material on the front faceplate to be optimized to produce a thin layer which avoids attenuation of light (see Col. 2, lines 30-38), but is silent regarding the limitation of the thickness being less than 7 μm ".

However, in the same field of endeavor, Murata discloses a PDP comprising a fluorescent material having a thickness of less than 7 μm and teaches said thickness to be suitable for reducing the voltage applied to the fluorescent material, which minimizes the discharge start voltage of each discharge space, facilitating driving control for displaying an image (see Col. 15, lines 44-55, and Col. 7, lines 65-66). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the fluorescent material with a thickness of 7 μm with the purpose of reducing the voltage applied to the fluorescent material, which

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minimizes the discharge start voltage of each discharge space, facilitating driving control for displaying an image.

Regarding claim 2, Anandan-Murata discloses the light-emitting device further comprising a fluorescent material on the rear faceplate.

In regard to claim 3, Anandan discloses the light-emitting device being a rare gas lamp.

In regards to claim 4, Anandan-Murata discloses the fluorescent material layer on the rear faceplate having a thickness of not less than about 30 μm . The Examiner notes that Anandan teaches the thickness of the fluorescent material on the rear faceplate to be in a range from 2 to 10 times the thickness of the fluorescent material on the front faceplate (see Col. 2, lines 53-57).

Response to Arguments

9. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

Prior Art of Record

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Mizobata (US 6,333,600) and Sumoto (JP 03-133048) disclose a light-emitting device which reads on at least claim 1.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 571-272-2451. The examiner can normally be reached on Monday thru Thursday, from 8:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gc


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